42. (New) The method of claim 1, further comprising reducing a resolution of the multi-level values by at least one bit prior to using them as the alpha blend values.

REMARKS

Applicants have filed a Supplemental Information Disclosure Statement (IDS) with Form PTO/SB/08A/B and cited references on August 22, 2002, which was sent after the Office Action was mailed August 13, 2002. Applicants submit herewith a copy of the Supplemental IDS and the Form PTO/SB/08A/B for the Examiner's reference convenience. Applicants respectfully request that the Examiner consider the references cited therein, copies of which have been provided to the Patent Office, and enter a copy of the signed and initialed Form PTO/SB/08A/B in the application file, and return a copy of it along with the next communication from the Patent Office.

Claims 1-23 and 25-42 remain in the present application, of which claims 1, 7-8, 21-23, 27-28 and 40-41 are independent. Claims 4-5, 12, 22-23, 27-28, 31-32 and 40-41 have been amended, and a new claim 42 has been added. Applicants appreciate the allowance of claims 7-8, 21-22, 27-28 and 40-41, of which claims 22, 27-28 and 40-41 have been amended herein to correct minor clerical errors. Applicants respectfully request that the allowance of claims 7-8, 21-22, 27-28 and 40-41 be maintained. In addition, applicants respectfully request reconsideration and allowance of claims 1-6, 9-20, 23, 25-26 and 29-39. Further, applicants respectfully request consideration on the merits and allowance of newly added claim 42.

The Examiner has rejected claims 1, 6 and 17-18 under 35 U.S.C. § 103(a) as allegedly being anticipated by U.S. Patent No. 6,229,550 to Gloudemans et al. ("Gloudemans").

Gloudemans appears to disclose a system where a graphic and video are blended by controlling the relative transparency of corresponding pixels in the graphic and the video through the use of blending

coefficients. Gloudemans in the Abstract discloses that the value of a blending coefficient for a pixel in the graphics is based on the luminance and chrominance characteristics of a neighborhood of pixels in the video. Gloudemans in the Abstract further discloses that inclusions and exclusions are set up which define how the neighborhood of pixels is used to create or change a particular blending characteristics.

In rejecting claim 1, the Examiner states that Gloudemans discloses that the alpha blending value does not depend on existed alpha value prior to filtering, and cites column 2, lines 61-63 of Gloudemans ("Each of the vertices on the border lines are given a nominal blending coefficient.") However, applicants respectfully submit that the blending coefficients in Gloudemans cannot be equated with the multi-level values of claim 1 that are used as alpha blend values because of at least the following reasons:

1) First of all, in claim 1, the multi-level values (that are used as alpha blend values) are generated by filtering the graphical element with a low pass filter, wherein generation of the multi-level values do not depend on alpha blend values that existed prior to filtering. Gloudemans in the section cited by the Examiner merely discloses that each of the vertices on the border lines are given a nominal blending coefficient. Applicants respectfully submit, however, that the Examiner does not point out any connection between these nominal blending coefficients and the filtering of a graphical element with a low pass filter.

2) Secondly, the Examiner appears to equate column 3, lines 14-17 of Gloudemans ("Once the blending coefficients are set for each of the vertices of the polygons, blending coefficients can be determined for each pixel in each polygon. Using the blending coefficients, the graphic can be blended with the video,") to "using the multi-level values as alpha blend values for the graphical element in a subsequent compositing stage" limitation of claim 1. Once again in claim 1, the

multi-level values are generated through low pass filtering the graphics element and used as alpha blend values, wherein generation of the multi-level values do not depend on alpha blend values that existed prior to filtering.

Applicants respectfully submit that the Examiner still does not establish any connection between filtering of any graphics element to generate the blending coefficients in Gloudemans. Applicants further respectfully submit that if Gloudemans discloses that the blending coefficients set for the vertices of the polygons are filtered in some way to generate the rest of the blending coefficients for each pixel in each polygon, it directly teaches against a limitation of claim 1, which recites that "generation of the multi-level values do not depend on alpha blend values that existed prior to filtering" if the blending coefficients indeed are to be viewed as corresponding to the multi-level values.

3) Thirdly, the Examiner cites column 2, lines 5-54 and recites that "If the pixels are to be used to generate an inclusion, then a display filter is created which describes the characteristics of the pixels in the set." Applicants do not believe the term "display filter" is used anywhere else in Gloudemans, and do not believe that there is any indication that this display filter is similar to the low pass filter of the present application. The Examiner further cites column 23, lines 5-7 and recites that "Any number of percentages may be employed, depending upon the resolution that is desired for the filter." Applicants do not believe that these passages are related to "filtering the graphical element with a low pass filter to generate a multi-level value per pixel at an intended final display resolution."

In particular, Gloudemans discloses that inclusion pixels are pixels that can be modified (Col. 19, lines 62-66) and an inclusion filter defines inclusion pixels by providing criteria that can be employed in determining whether a pixel is an inclusion pixel. (Col.

20, lines, 65-67). In view of these passages, applicants respectfully submit that the inclusion filter appears to correspond to the display filter and that it does not appear to have anything to do with the low pass filter used to filter the graphical element to generate a multi-level value per pixel at an intended final display resolution.

Claim 1 recites, in relevant portion, that "filtering the graphical element with a low pass filter to generate a multi-level value per pixel at an intended final display resolution; and using the multi-level values as alpha blend values for the graphical element in a subsequent compositing stage, wherein generation of the multi-level values do not depend on alpha blend values that existed prior to filtering." Since Gloudemans does not disclose "filtering the graphical element with a low pass filter to generate a multi-level value per pixel at an intended final display resolution; and using the multi-level values as alpha blend values for the graphical element in a subsequent compositing stage, wherein generation of the multi-level values do not depend on alpha blend values that existed prior to filtering," applicants respectfully submit that Gloudemans does not anticipate claim 1, and respectfully request that the rejection to claim 1 be withdrawn and that it be allowed.

Since claims 6 and 17-18 depend, directly or indirectly, from claim 1, they incorporate all the terms and limitations of claim 1 in addition to other limitations, which together patentably distinguish them over the cited references. Therefore, applicants respectfully request that the rejection to claims 6 and 17-18 be withdrawn and that they be allowed.

The Examiner has rejected claims 2-5 and 25 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Gloudemans [The Examiner refers to 6,038,031 here, however, Gloudemans corresponds with U.S. Patent No. 6,229,550, and from the context of the Office Action, applicants believe that the Examiner actually refers to Gloudemans for these rejections, and not to Murphy (U.S Patent No. 6,038,031) except

for claim 25, which the Examiner appears to have rejected over Murphy in view of Foley et al.], and further in view of Foley et al. (Computer Graphics: Principles and Practice).

Since claims 2-5 depend, directly or indirectly, from claim 1, they incorporate all the terms and limitations of claim 1 in addition to other limitations, which together patentably distinguish them over the cited references. Therefore, applicants respectfully request that the rejection to claims 2-5 be withdrawn and that they be allowed.

The Examiner has rejected claims 9-16, 19-20, 23, 26 and 29-39 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Gloudemans [Here, the Examiner appears to reject claims 9-16 and 19-20 over Gloudemans, claims 23, 26 and 29-36 over Murphy, and claims 37-39 over a combination of Gloudemans and Murphy.].

Since claims 9-16 and 19-20 depend, directly or indirectly, from claim 1, they incorporate all the terms and limitations of claim 1 in addition to other limitations, which together patentably distinguish them over the cited references. Therefore, applicants respectfully request that the rejection to claims 9-16 and 19-20 be withdrawn and that they be allowed.

As per any rejection of claim 23 over Gloudemans, applicants respectfully submit that claim 23 recites, in relevant portion, that "a low pass filter for filtering the graphical element to generate multi-level values, one multi-level value per each pixel, at an intended final display resolution . . . a display engine for compositing the graphical element with at least one graphics image using the multi-level values as alpha blend values, wherein generation of the multi-level values do not depend on alpha blend values that existed prior to filtering," which Gloudemans does not teach, suggest or otherwise disclose (Please see the foregoing discussions in reference to claim 1). Therefore, applicants respectfully request that any rejection to claim 23 over Gloudemans be withdrawn.

As per any rejection of claim 23 over Murphy, the Examiner appears to maintain the rejection of the Office Action mailed January 11, 2002 even though the Examiner states on page 12 of the current Office Action [mailed August 13, 2002] that applicant's argument with respect to claims 1 and 23 [in the Amendment mailed April 11, 2002] have been considered but are moot in view of the new ground(s) of rejection. In that regard, applicants hereby re-present arguments in the Amendment of April 11, 2002 in response to the rejection in the Office Action of January 11, 2002.

According to the Examiner, the passage in Murphy that states "At the edge of the cut-out, where valid and invalid source pixels are adjacent, the alpha values after filtering vary in proportion to the distance from the edge of the cut-out" (co. 6, lines 52-55) discloses the claim limitation of "wherein generation of the multi-level values do not depend on alpha blend values that existed prior to filtering." Applicants respectfully traverse this finding because of at least the following reasons.

In the present invention, for example, the following steps are taken to generate and use the alpha blend values: 1) filtering the graphical element with a low pass filter to generate a multi-level value per pixel at an intended final display resolution; and 2) using the multi-level values as alpha blend values for the graphical element in a subsequent compositing stage. The generation of the multi-level values do not depend on alpha blend values that existed prior to filtering. Instead, they are generated through low pass filtering the graphical element.

On the contrary, Murphy discloses filtering the pre-existing alpha value. Thus, "the pixel being copied may be blended with the destination frame buffer using the *filtered alpha value.*" (*emphasis added*, col. 6, lines 50-52). The finding that Murphy discloses filtering of the alpha values has further support in the following passage from Murphy. "*The alpha channel of all pixels*, whether

rejected or accepted, *are filtered.*" (emphasis added, col. 6, lines 20-21).

Further, according to Murphy, "The alpha values of the edge pixels are filtered so that they form a range from one within the area to be drawn to zero within the area not drawn. In the region close to the edge of what is to be drawn, the alpha values are filtered to lie between zero and one." (col. 8, lines 53-57). The above passage appears to further describe the following passage, "At the edge of the cut-out, where valid and invalid source pixels are adjacent, the alpha values after filtering vary in proportion to the distance from the edge of the cut-out" (col. 6, lines 52-55), which has been cited by the Examiner to show that Murphy discloses the claim limitation of "wherein generation of the multi-level values do not depend on alpha blend values that existed prior to filtering."

Applicants respectfully submit that there is a huge conceptual difference between filtering existing alpha values to use as filtered alpha values, and generating multi-level values to be used as alpha blend values that do not depend on alpha blend values that existed prior to filtering. In fact, Murphy appears to teach away from the present invention by disclosing that the alpha channel of all pixels are filtered to generate the filtered alpha values. (col. 6, lines 18-55).

Claim 23 recites, in relevant portion, that "a low pass filter for filtering the graphical element to generate multi-level values, one multi-level value per each pixel, at an intended final display resolution . . . a display engine for compositing the graphical element with at least one graphics image using the multi-level values as alpha blend values, wherein generation of the multi-level values do not depend on alpha blend values that existed prior to filtering." Since Murphy does not teach, suggest or otherwise disclose "a low pass filter for filtering the graphical element to generate multi-level values, one multi-level value per each pixel, at an intended final

display resolution . . . a display engine for compositing the graphical element with at least one graphics image using the multi-level values as alpha blend values, wherein generation of the multi-level values do not depend on alpha blend values that existed prior to filtering," applicants respectfully request that the rejection to claim 23 be withdrawn, and (also in view of withdrawal of any rejection of claim 23 over Gloudemans) that claim 23 be allowed.

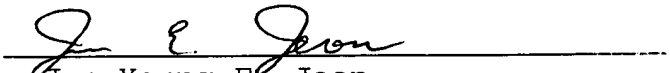
Since claims 25-26 and 29-39 depend, directly or indirectly, from claim 23, they incorporate all the terms and limitations of claim 23 in addition to other limitations, which together patentably distinguish these claims over the cited references. Therefore, applicants respectfully request that the rejection to claims 25-26 and 29-39 be withdrawn and that they be allowed.

In view of the foregoing amendments and remarks, applicants respectfully request allowance of claims 1-6, 9-20, 23, 25-26, 29-39 and 42 in addition to the already allowed claims 7-8, 21-22, 27-28 and 40-41. If there is any remaining issue that can be addressed over the telephone, the Examiner is invited to call applicants' attorney at the number listed below.

Attached hereto is a marked-up version of the changes made to the above-identified application by the current amendment. The attached page is captioned "**Version with markings to show changes made.**"

Respectfully submitted,

CHRISTIE, PARKER & HALE, LLP

By 

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

4. (Amended) The method of displaying a graphical element of claim 3 wherein the graphical element is initially rendered at four times the resolution of the intended final display resolution in at least a horizontal [~~axis~~] direction.

5. (Amended) The method of displaying a graphical element of claim 3 wherein the graphical element is initially rendered at four times the resolution of the intended final display resolution in at least a vertical [~~axis~~] direction.

12. (Amended) The method of displaying a graphical element of claim 1 wherein the graphical element has a plurality of foreground colors, which are filtered using [~~a~~] the low pass filter.

22. (Twice Amended) A method of displaying a graphical element comprising the steps of:

filtering the graphical element with a low pass filter to generate a multi-level value per pixel at an intended final display resolution; and

using the multi-level values as alpha blend values for the graphical element in a subsequent compositing stage,

wherein the multi-level values are written into a display buffer where the multi-level values are used as the alpha blend values when contents of the display buffer are composited with other graphics and video images, and

wherein [~~the~~] opacity of the graphical element may be varied by specifying the alpha value of the display buffer.

23. (Twice Amended) A graphics display system for displaying a graphical element comprising:

a low pass filter for filtering the graphical element to generate multi-level values, one multi-level value per each pixel, at an intended final display resolution;

a display buffer for storing the multi-level values; and

a display engine for compositing the [~~multi-level values~~] graphical element with [~~graphics images~~] at least one graphics image using the multi-level values as alpha blend values,

wherein generation of the multi-level values do not depend on alpha blend values that existed prior to filtering.

27. (Twice Amended) A graphics display system for displaying a graphical element comprising:

a low pass filter for filtering the graphical element to generate multi-level values, one multi-level value per each pixel, at an intended final display resolution;

a display buffer for storing the multi-level values; and

a display engine for compositing the [~~multi-level values~~] graphical element with graphics images using the multi-level values as alpha blend values,

wherein the graphical element includes text, and the display buffer is defined to have a constant foreground color that is consistent with a desired foreground color of the text.

28. (Twice Amended) A graphics display system for displaying a graphical element comprising:

a low pass filter for filtering the graphical element to generate multi-level values, one multi-level value per each pixel, at an intended final display resolution;

a display buffer for storing the multi-level values; and

a display engine for compositing the [~~multi-level values~~] graphical element with graphics images using the multi-level values as alpha blend values,

wherein the graphical element includes graphics, and the display buffer is defined to have a constant foreground color that is consistent with a desired foreground color of the graphics.

31. (Amended) The graphics display system of claim 30 wherein the pixels having [~~color portions and alpha portions~~] a color portion and an alpha portion are in an alphaRGB (4,4,4,4) format.

32. (Amended) The graphics display system of claim 23 wherein the graphical element has a plurality of foreground colors, which are filtered using [~~a~~] the low pass filter.

40. (Twice Amended) A graphics display system for displaying a graphical element comprising:

a low pass filter for filtering the graphical element to generate multi-level values, one multi-level value per each pixel, at an intended final display resolution;

a display buffer for storing the multi-level values; and

a display engine for compositing the [~~multi-level values~~] graphical element with graphics images using the multi-level values as alpha blend values,

wherein an outline of the graphical element, including all colors other than background color, is filtered using the low pass filter, wherein the graphical element has a plurality of foreground colors

wherein the filtered outline is used as an alpha per pixel value, and

wherein the filtered outline is used as a choice of an alpha value per CLUT entry in a CLUT format.

41. (Twice Amended) A graphics display system for displaying a graphical element comprising:

a low pass filter for filtering the graphical element to generate multi-level values, one multi-level value per each pixel, at an intended final display resolution;

a display buffer for storing the multi-level values; and

a display engine for compositing the [~~multi-level values~~] graphical element with graphics images,

wherein [~~the~~] translucency of the graphical element is varied by specifying the alpha value of the display buffer.

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